

## The Evolution of Exozodiacal Debris Disks

Scott Kenyon

(Email: [skenyon@cfa.harvard.edu](mailto:skenyon@cfa.harvard.edu))

Smithsonian Astrophysical Observatory, Cambridge, Massachusetts

I will describe applications of numerical simulations of planet formation to the evolution of exozodiacal debris disks. In a planetesimal disk, planets grow from collisions and mergers of 1 km and smaller objects. As large planets form, their gravity stirs the orbits of leftover planetesimals. Planetesimal collisions then yield fragments instead of mergers. The resulting collisional cascade produces copious dusty debris, which is observable as a large IR excess relative to the stellar radiation. I will describe the amount and time evolution of the IR excess for three cases: 1) terrestrial planet formation, 2) gas giant planet formation, and 3) close passage of a solar mass star near the disk.

